

Workstage Presentation
to
Labs21 Conference

January 10, 2002





Challenges / Research

Challenges of Today's Workplace:

- Individual Comfort & Productivity
- Organizational Flexibility
- Technological Adaptability
- Environmental Sustainability
- Delivery, Timing, & Cost

Research:

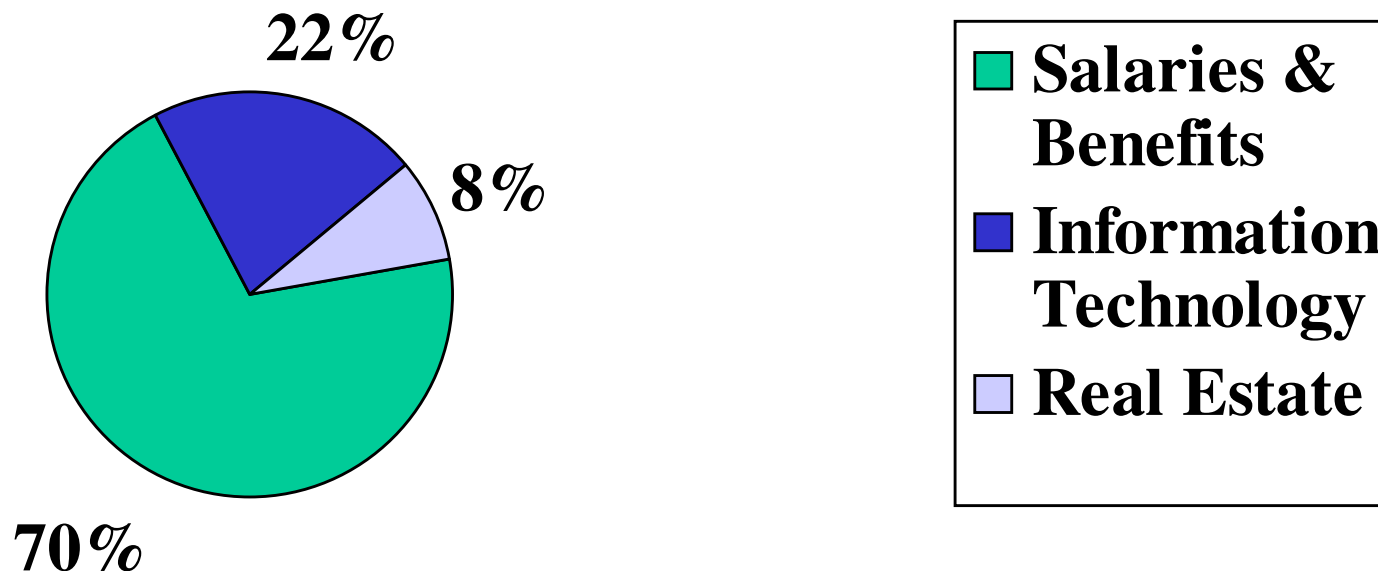
In 1988 the ABSIC (Advanced Building Systems Integration Consortium) was established at Carnegie Mellon University to conduct research in response to these challenges. The consortium includes members from international industry, academia and government researchers.

Approximately 30% of Corporate Expenses Are for Real Estate and Technology

Corporate America's Challenge:

Decrease Technology and Facility Costs
While Improving Employee Productivity

Corporate Expenses



HOW DO YOU MEASURE A BUILDING'S PERFORMANCE?

Carnegie Mellon University's Center for Building Performance & Diagnostics

- **FIRST COSTS**

Building and Information Technology Infrastructure

- **EMPLOYEE COSTS**

Attract and Retain, Improved Communication, Improved Effectiveness

- **INDIVIDUAL PRODUCTIVITY**

Quality of Life and Productivity

- **ORGANIZATIONAL PRODUCTIVITY**

Time to Market and Extraordinary Service

- **HEALTH COSTS**

Absenteeism

A BUILDING'S PERFORMANCE (Continued)

Carnegie Mellon University's Center for Building Performance & Diagnostics

- OPERATIONAL COST SAVINGS

Energy, Maintenance and Repair

- FACILITY RENEWABILITY COSTS:

Flexibility and Churn

- IT RENEWABILITY COSTS:

Desktop Technology and Networking

- TAX/CODE/INSURANCE/LITIGATION COST SAVINGS

Tax Benefits and Code Compliance

- SALVAGE WASTE COST SAVINGS

Recyclable Materials



workstage™

SMART BUILDINGS
REVOLUTIONARY WORK ENVIRONMENTS

A JOINT VENTURE OF:



Gale & Wentworth
Real Estate Investments & Services



MORGAN STANLEY DEAN WITTER

GALE & WENTWORTH

FLORHAM PARK, NEW JERSEY

ONE OF THE LARGEST PRIVATELY HELD U.S.
COMMERCIAL REAL ESTATE COMPANIES
WITH A \$2.0 BILLION PORTFOLIO



G&W TEAM MANAGES 70 MILLION SQ. FT.
OF COMMERCIAL PROPERTY



15-YEAR HISTORY OF DYNAMIC GROWTH



23 OFFICES IN THE U.S. AND LONDON

STEELCASE

GRAND RAPIDS, MICHIGAN

WORLD'S MARKET LEADER IN DESIGNING
AND MANUFACTURING HIGH PERFORMANCE
WORK ENVIRONMENTS



FURNISHES 100-200 MILLION SQ. FT.
OF OFFICE SPACE ANNUALLY



OUTSPENDS ALL FURNITURE INDUSTRY
COMPETITORS IN R&D SPENDING



LEADING INDUSTRY IN INNOVATIVE
INTERIOR ARCHITECTURAL DESIGN
SOLUTIONS





DESIGN PRINCIPLES



THE USER



FLEXIBILITY



THE ENVIRONMENT



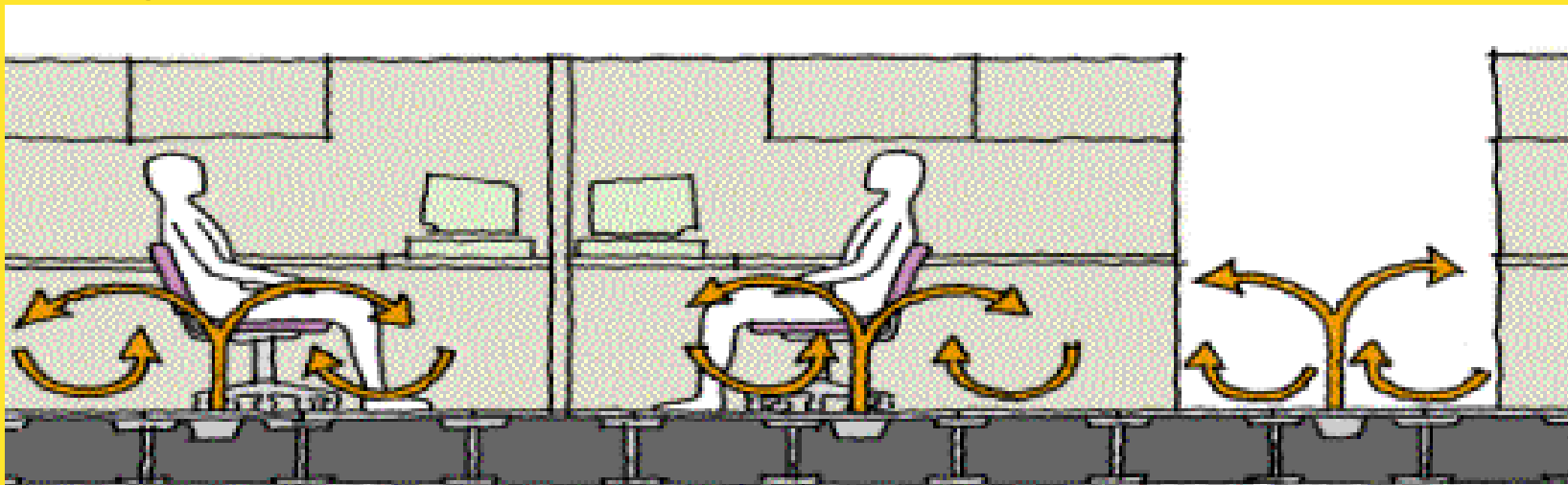
SPEED/COST

DESIGN PRINCIPLE ONE

THE USER

WORKSTAGE BUILDINGS

- Allows individual HVAC control with diffusers every 64 square feet
- Connects the USER with the environment with natural, ambient and task lighting along with operable windows and a great porch
- Flexible Plug and Play Environment in a wide range of Worksettings
- **INCREASES PRODUCTIVITY** by giving your work force a better workspace environment



DAYLIGHT AND INDIRECT AMBIENT LIGHTING

THE USER



A WIDE RANGE OF GROUP AND INDIVIDUAL WORKSETTINGS

THE USER





EMPLOYEE AMENITIES

THE USER

A close-up photograph of a metal spring, likely from a stage set, with a blue and purple color cast. The spring is coiled and occupies the upper half of the slide.

DESIGN PRINCIPLE TWO

FLEXIBILITY

The stage manages HVAC
Power, and Telecomm.

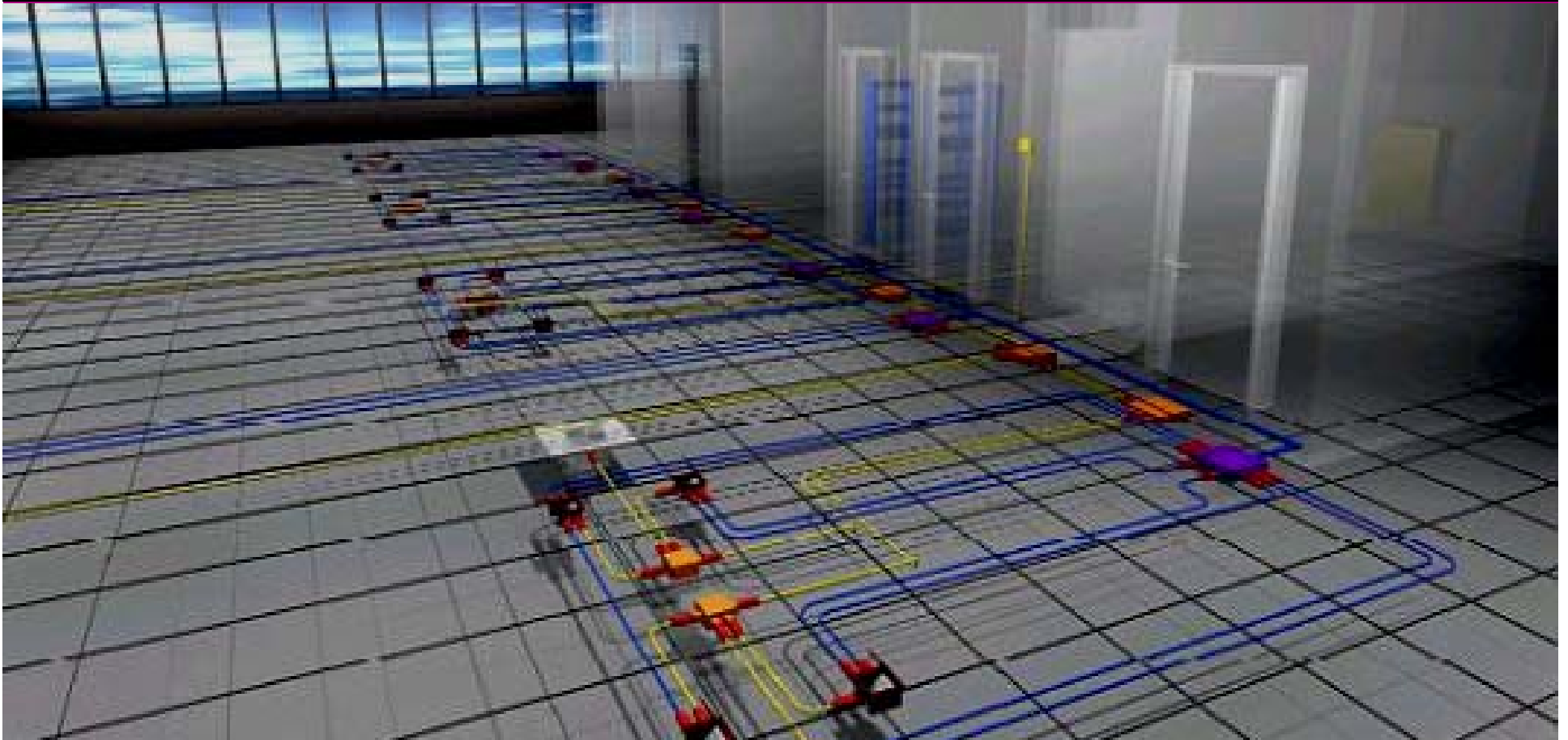
Changes by moving four
screws.

40 ft x 40 ft bay sizes and central
cores to front for greater
planning flexibility.

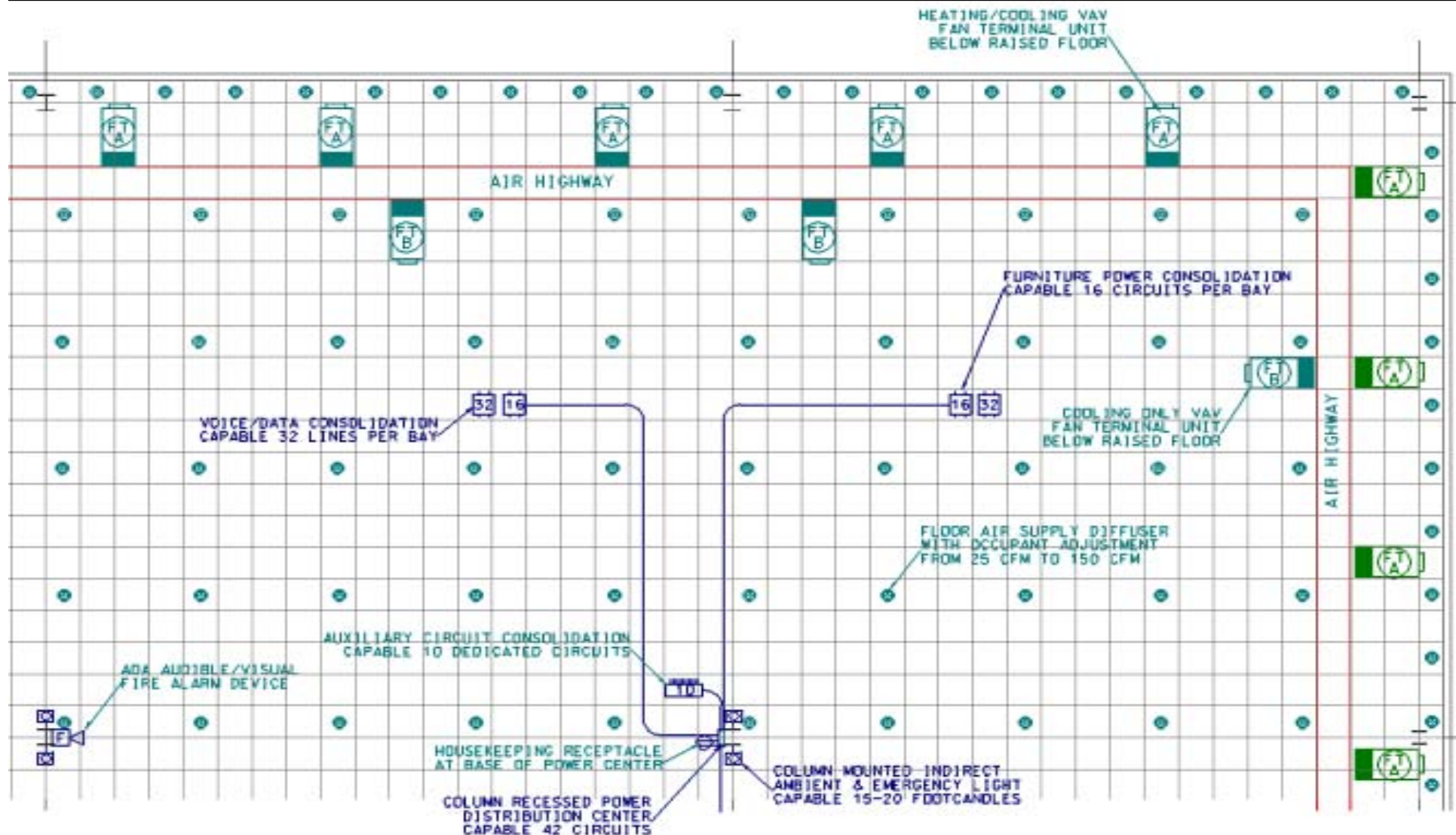
Use of Office Furniture and
Interior Architectural Products.

HVAC
POWER
TECHNOLOGY INFRASTRUCTURE

FLEXIBILITY

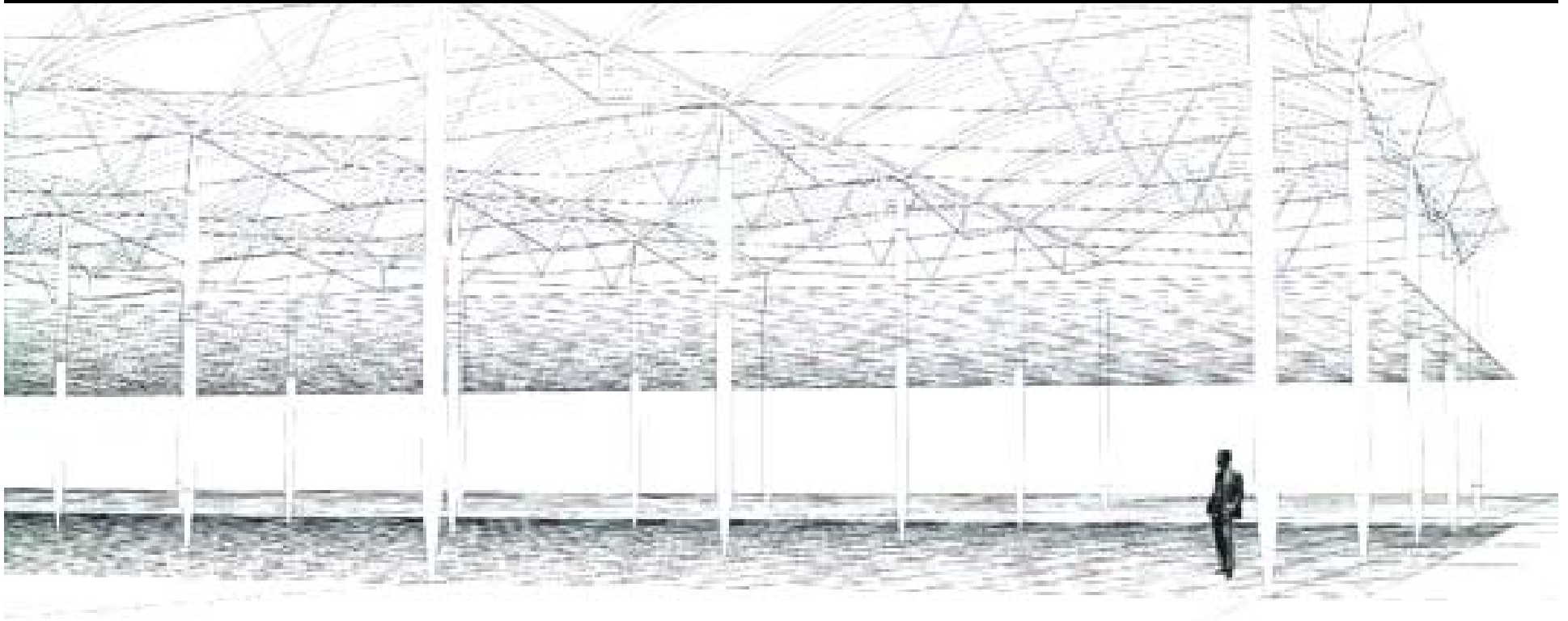


Underfloor Distribution



BAY SIZE INCREASED TO 40X40

FLEXIBILITY





DESIGN PRINCIPLE THREE

THE ENVIRONMENT

Connects User With Nature

Building Consumes Less Energy

Sustainable Design

Environmentally and Human Friendly Materials

Workstage Buildings Use Less Energy

Room temperature of 75 degrees

- 65 degree underfloor
- 55 degree overhead

Less lighting

- Natural light
- Task lighting
- Indirect light (we don't light carpet)

Traditional building (Grand Rapids) \$1.25 per sq. ft.

Workstage building (Grand Rapids) \$1.00 per sq. ft.

About 20% Less

Sustainable Design – Less of the building ends up in
land fills each time you change and churn.

NEW VALUE CHAIN

DESIGN PRINCIPLE FOUR SPEED/COST

THE PROCESS ...

- Pre-Designed
- Pre-Engineered Building Elements
- Chassis and Skins
- Pre-Assembled Building Elements
- Direct Alliances With Manufacturers
- Automated and Direct Purchasing
- Consolidated Freight: Just-in-time

THE PLAYERS...

- Nationally Recognized Manufacturers
- Shared Product Development Ideas
A & D Firms
- Regional “Assemblers”

Life Cycle Cost Savings of Churn - Pittsburgh, PA
 Costs Benefits of Raised Flooring System
 Carnegie Mellon University's Center for Building Performance & Diagnostics

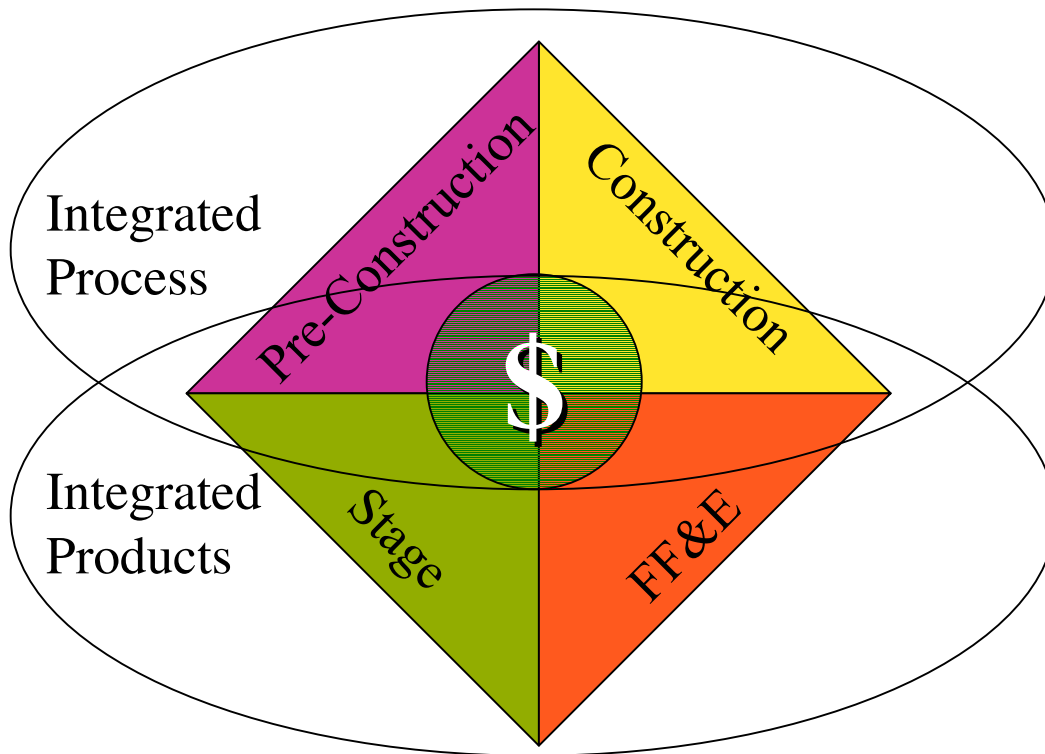
SPEED / COST

	Overhead System	Raised Floor System	Savings
Electrical Power			
Labor	0.98	0.28	0.70
Material	<u>0.85</u>	<u>0.00</u>	<u>0.85</u>
Sub Total	1.83	0.28	1.55
Telephone/Data			
Labor	0.56	0.32	0.24
Material	<u>0.53</u>	<u>0.00</u>	<u>0.53</u>
Sub Total	1.09	0.32	0.77
Mechanical/HVAC/Drywall			
Labor	1.15	0.09	1.06
Material	<u>1.30</u>	<u>0.00</u>	<u>1.30</u>
Sub Total	2.45	0.09	2.36
Total	5.37	.69	4.68 per sq. ft.



Workstage Building Process

Building and Interiors Integrated Into One Streamlined Process



- 100% Turnkey Space
- Shorter Building Process 6-9 Months Vs. 12-16 Months
- All in One, Off Balance Sheet Pricing/FF&E Tax Advantages
- Strategic Facility Planning
- Workplace Performance Analysis



Workstage Building Process

Traditional

Foundation
Steel
Roof
Core - Built in Place
Skin
Concrete Slab Floor
HVAC Rough-in
Power Rough-in
Telecom Rough-in
Fire Rough-in

Workstage

Foundation
Steel
Roof
Core - **Prefab Components**
Skin - **Panelized system**
Raised Floor system
* HVAC **Throughout**
* Carpeted **Throughout**
* Power **Throughout**
* Telecom **Throughout**
* Fire Suppression **Throughout**



Workstage Building Process

<u>Specifications</u>	<u>Traditional</u>	<u>Workstage</u>
<i>HVAC</i>	No User Control 4-6 Air changes per hour Dilution Method	User Control - Every 64 sf 6-8 Air changes per hour Displacement Method
<i>Power</i>	“Hard” Wall Connections 4-5 Watts psf at desktop Central Electrical Closets	8/1000 Density “Modular-Plug & Play” Connections 7.5 Watts psf at desktop Local Power Distribution Panels
<i>Telecom</i>	“Hard” Wall Connections Home Runs	Voice & Data 8/1000 Density “Modular - Plug & Play” Connections
<i>Interior Arch.</i>	Conventional Drywall/ Drop Ceiling Construction	Raised Floor/Modular Demountable Walls/Pre-Engineered to Interface with Building Architecture/40’ Bay Construction
<i>Furnishings</i>	Standard Utilization of Free Standing and Systems Furniture to Fit Pre-Existing Interior Conditions	Seamless Integration of Open Plan Work Settings/ Modular Walls, Plug & Play, Voice Data & Power Distribution, Acoustics and Lighting



Workstage Building Process Value Proposition

<u>CATEGORY</u>	<u>SAVINGS</u>
<ul style="list-style-type: none">• \$ PSF FACILITY & FURNITURE COSTS USER CENTERED DESIGN PRINIPLES REDUCE SQ. FOOTAGE.	5 - 10 %
<ul style="list-style-type: none">• SPACE EFFICIENCY BAY SIZE AND CORE PLACEMENTS INCREASE EFFICIENCY	10 %
<ul style="list-style-type: none">• ENERGY COSTS EFFICIENT DESIGN AND DELIVERY SYSTEM USES LESS ENERGY	10 - 20 %
<ul style="list-style-type: none">• LIFE CYCLE COSTS (CHURN) INTERIORS CAN CHANGE AND GROW	80 %
<ul style="list-style-type: none">• SPEED OF IMPLEMENTATION 100% TURNKEY SPACE	30 - 40 % Faster

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